AMENDMENT TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-15 (cancelled)

16. (Currently Amended) A method for melting down metal-containing material which comprises:

providing a metallurgical melting furnace having an interior space, a metal melt material located in the interior space of the furnace, and a slag layer floating on top of the metal melt material;

conveying the metal containing material directly into a central region of the melting furnace through at least one charging tube having an opening dipping permanently into the slag layer, wherein the position of the charging tube and the insertion depth of the lower end of the charging tube into the slag layer is regulated during melting,

applying energy by directing electric arcs toward the metal melt wherein the electric arcs are directed obliquely against the central region of the furnace thereby forming an energy centre in the region of the lower end of the charging tube to provide a surplus amount of energy for melting the metal-containing material,

melting the metal-containing material in the slag layer, and

mixing the slag metal melt.

17. (Previously Presented) A method according to claim 16 comprising applying energy in a location proximate to the opening of the charging tube.

18. (Previously Presented) A method according to claim 16 comprising conveying metal containing material in at least one selected from the group consisting of a lumpy form and fine particulate form to the furnace.

19. (Previously Presented) A method according to claim 16 comprising conveying metal containing material at a temperature of between 500°C and 1000°C into the furnace wherein the metal containing material is obtained from a reduction process.

20. (Previously Presented) A method according to claim 19 comprising conveying metal containing material at a temperature of between 600°C and 700°C.

21. (Previously Presented) A method according to claim 16 wherein the slag layer comprises foamed slag.

22. (Previously Presented) A method according to claim 21 comprising applying gaseous oxygen to the slag layer to form the foamed slag.

23. (Previously Presented) A method according to claim 21 comprising adding fine-grained carbon to the slag and applying oxygen onto the slag to form the foamed slag.

24. (Previously Presented) A method according to claim 16 comprising conveying the metal containing material into the furnace exclusively by gravity.

25. (Previously Presented) A method according to claim 16 further comprising positioning the charging tube in the slag layer as a function of the rate of conveying the metal-containing material.

26. (Previously Presented) A method according to claim 16 wherein the charging tube is electrically conductive and further comprising providing a voltage measurement device and positioning the charging tube in the slag as a function of voltage measured by the voltage measurement device.

27. (Previously Presented) A method according to claim 16 wherein the charging tube is electrically conductive and further comprising providing a current measurement device and positioning the charging tube in the slag layer as a function of current measured by the current measurement device.

28. (Previously Presented) A method according to claim 16 further flushing the furnace with a gas.

29. (Previously Presented) A method according to claim 16 wherein the melting down process is a continuous process, and wherein the level of the melt layer in the furnace is continuously maintained.

30. (Previously Presented) A method according to claim 29 wherein the slag layer in the furnace is continuously maintained.

31. (Currently Amended) A method according to claim 16 further comprising cooling the melting furnace and ~~foaming~~ forming water vapor.

32. (Currently Amended) A method for melting down metal-containing material which comprises:

providing a metallurgical melting furnace having an interior space, a metal melt material located in the interior space of the furnace, and a slag layer floating on top of the metal melt material;

conveying the metal containing material exclusively by gravity directly into a central region of the melting furnace through at least one charging tube having an opening dipping permanently into the slag layer, wherein the position of the charging tube and the insertion depth of the lower end of the charging tube into the slag layer is regulated during melting,

applying energy by directing electric arcs toward the metal melt wherein the electric arcs are directed obliquely against the central region of the furnace thereby forming an energy centre in the region of the lower end of the charging tube to provide a surplus amount of energy for melting the metal-containing material,

melting the metal-containing material in the slag layer, and

mixing the slag metal melt.